ABSTRACT OF THE DISCLOSURE

A method using an image guide having several thousands of optical fibers, an excitation signal emitted by a source, deflected and injected by turns into the optical fibers, each excitation point of the tissue in the fiber output emitting in return a fluorescence signal collected by the fiber, then detected and digitized to form an image element. The method focuses the beam in the fiber output to excite a subsurface plane to produce a confocal image. The production of a divergent beam in the fiber output can excite a micro-volume of the tissue from the surface. The method deflects the excitation signal at a speed corresponding to acquisition of a number of images per second sufficient for real time use and in detecting the fluorescence signal at a detecting frequency corresponding to a minimum frequency for sampling the fibers one-by-one.